

## The genus *Diplurodes* Warren (Geometridae, Ennominae) of Sumatra

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**Abstract** Fifteen species of the genus *Diplurodes* are recorded from Sumatra. The following six new species are described: *D. seinoi*, *D. bifidisacculus*, *D. cristatus*, *D. indentodes*, *D. sommereri*, and *D. diehli*. *D. submontana* Holloway and *D. indentata* Warren are newly recorded.

**Key words** *Diplurodes*, Boarmiini, Geometridae, new species, new record, Sumatra.

The genus *Diplurodes* Warren was strictly defined by Holloway (1994) by close comparison with allied genera in the eleventh part of “The moths of Borneo” series, and ten species were recorded from Borneo, with descriptions of four new species. Seven of them were also recorded from Sumatra, partly based on my material. Two species were left undescribed because they were represented by single males having very similar genitalia to those of the congeners. One of them (Holloway, 1994, fig. 561) found also from Sumatra will here be described as a new species, but another species (Holloway, 1994, fig. 562) still remains unidentified.

For detailed definition of *Diplurodes*, see the paper by Holloway (1994) and my previous paper on the Philippine *Diplurodes* (Sato, 1999).

In this paper, fifteen species of *Diplurodes* will be recorded from Sumatra, including six new species and two species newly added to Sumatran fauna.

Detailed notes on the localities of collecting sites in Sumatra were given by Diehl (1982, 1997), Kobes (1985, 1992) and Schintlmeister (1994).

The following acronyms are used to indicate the location of the specimens. BMNH: The Natural History Museum, London, UK. MS: Manfred Sommerer collection, Munich, Germany. NIAES: Natural Resources Inventory Center, National Institute for Agro-Environmental Sciences, Tsukuba, Japan. NSMT: National Science Museum, Tokyo. ZFMK: Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany. ZSM: Zoologische Staatssammlung, Munich, Germany.

Unless stated otherwise, all the specimens including the type material recorded in this paper will be deposited in NIAES.

### *Diplurodes inundata* Prout (Figs 1–2)

*Diplurodes inundata* Prout, 1929: 74.

This and the next three new species (*seinoi*, *bifidisacculus*, *cristatus*) share the following characteristics: both wings greyish, medial area of forewing and basal half of hindwing paler than the rest; strong pairs of coremata between abdominal segments 4 and 5, and 7 and 8 in male. This species can easily be distinguished from the others as follows. Forewing roundish apically; undersides of both wings predominantly black on distal half, the rest paler with a slight tinge of pink. Male genitalia (Fig. 37): Holloway (1994, fig. 555, Borneo), Sato (1999, fig. 45, Mindanao Is.). Female genitalia (Fig. 52): Sato (1999, fig. 63,

Mindanao Is.).

Material examined. 1 ♀, Berastagi; 3 ♀, Karo Highland 900 m; 2 ♂ 1 ♀, Dolok Merangir 170 m; 3 ♂ 2 ♀, Pematang Siantar; 39 ♂ 39 ♀, Holzweg II 1,050 m; 1 ♂ 1 ♀, Tele 1,800 m; 3 ♂ 2 ♀, Prapat; 1 ♀, Gunung Malayu; 1 ♂, Bukit Subang; 1 ♂ 3 ♀, Lampung.

Geographical range. Peninsular Malaysia, Borneo, Sumatra, Java, Philippines (Luzon, Negros, Mindanao, Palawan).

***Diplurodes seinoi* sp. nov.** (Figs 3–5)

Length of forewing 13–17 mm, wingspan 24–29 mm. Most similar to *inundata*. Forewing. More elongate, less roundish apically; darker between antemedial and postmedial lines. Hindwing. Darker basad of postmedial line. Underside. Distal black part paler and restricted to distad of postmedial line; medial line more distinct.

Male genitalia (Fig. 38). Somewhat similar to those of *kerangatis* (Fig. 46) in having a slender saccular process close to ventral margin of valva, but different from them in the following characteristics. Valva ampler; saccular process slenderer, tapering apicad, while in *kerangatis* upcurved at the apex. Tongue-like process from tegumen more developed, in form of semicircle. Medial portion of gnathos broader.

Female genitalia (Fig. 53). Sterigma wider than length, tapered anteriorly, heavily sclerotized laterally. Bursa copulatrix weakly sclerotized near sterigma, with a small bowl-like signum posteriorly. Somewhat similar to those of *inundata*, but in *inundata* sterigma much longer, bursa copulatrix sclerotized in U-shape posteriorly, signum larger.

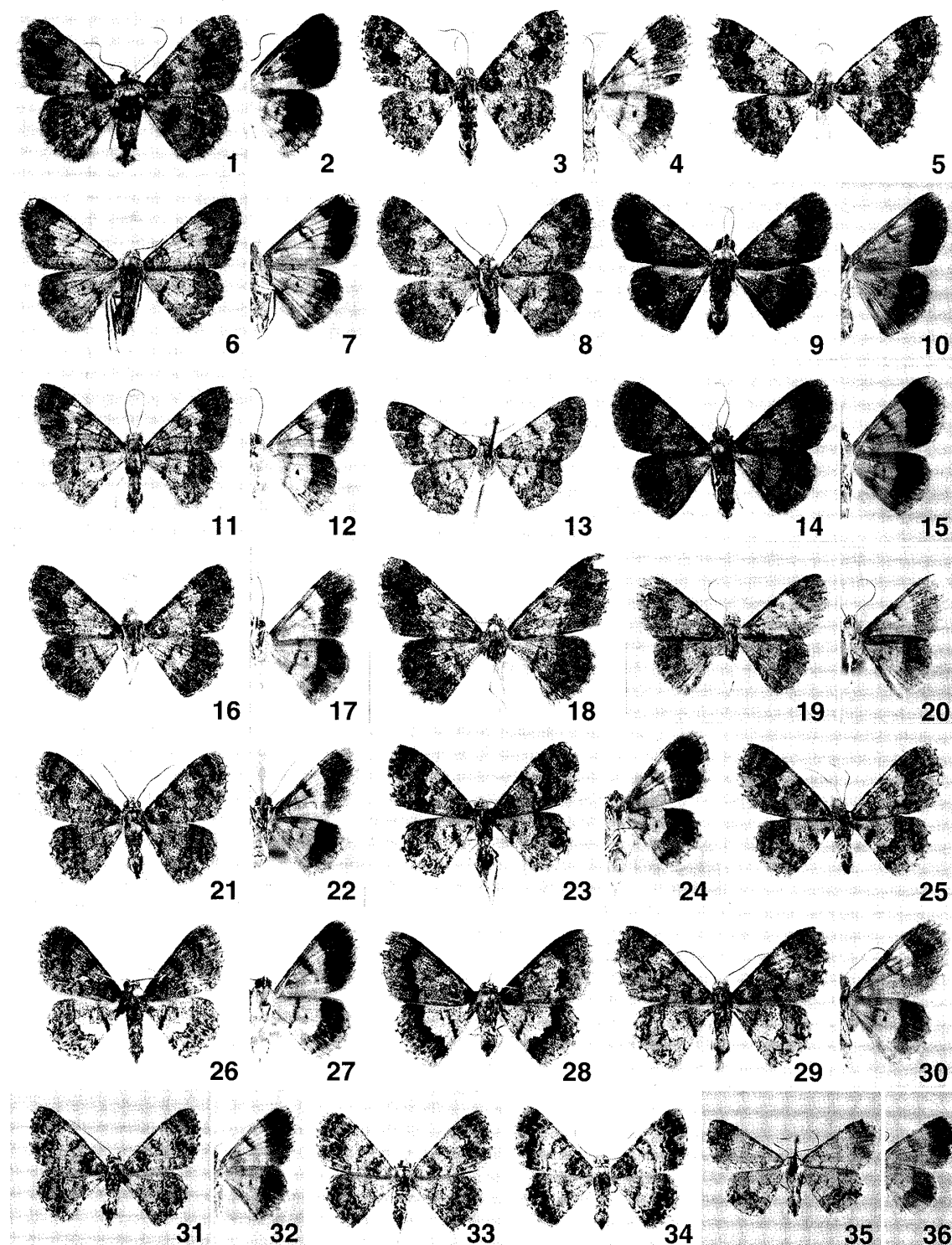
Holotype. ♂, N. Sumatra, Berastagi 1,500 m, 26–28. vii. 1985 (R. Sato). Paratypes. Berastagi 1,500 m, 1 ♀, 26–28. vii. 1985 (R. Sato), Mts Dairi 1,500 m, 1 ♂, 27. iv. 1986 (E. W. Diehl), Mt Sibayak II, 1 ♂, 4. v. 1988 (S. & A. Saito), Samosir, Tobasee, 2 ♂, 20. ix. 1991 (Graul & Schintlmeister), Samosir, 1 ♂, 24. ix. 1991, P. Siantar, 1 ♂, 20. ii. 1991, Tele, 1 ♂, 22. v. 1990 (E. W. Diehl), W. Sumatra, Mt Talamau, Westseite, 12 km S. Talu, 1 ♂, 11. ix. 1991 (Graul & Schintlmeister), Bukit Subang, 5 ♂, 19. x. 1981 (A. Schintlmeister). “Air Putih Quelle Süd 97°30 E/4°09 N 1,650 m”, 2 ♂, 27. i. 1989, “Gunung Leuser, Bepangi 2,200 m, 3°55’26”N/97°10’53”E”, 1 ♀, 27. ii. 1997 (Plössl & Tarmann), “Dairi Berge 1,800 m, 30 km E Sidikalang”, 1 ♂ 2 ♀, 8–9. i. 1981 (M. Sommerer), “Holzweg II 1,050 m, 28 km SW Siantar 98°59 E/2°46 N”, 2 ♂ 1 ♀, 1. vi. 1986 (E. W. Diehl), “Kerinci, Kayu Aro 1,800 m, nördl. Sungaipenuh”, 3 ♂ 1 ♀, 20–23. ii. 1976 (M. Sommerer), “östl. Tobasee Tele ca. 1,600 m”, 1 ♀, 6. ix. 1975 (E. W. Diehl), “Holzweg III 1,150 m, 14 km NE Prapat 98°58 E/2°46 N”, 1 ♀, 10–21. xi. 1983, 1 ♂, 21–26. x. 1983, 2 ♀, 13–21. iii. 1984, 1 ♂, 24. iii. 1986 (E. W. Diehl), MS. “Dairi-Berge, 30 km NO v. Sidikalang 1,500 m”, 3 ♂ 1 ♀, 5. v. 1972 (Roesler & Küppper), ZFMK.

Geographical range. Sumatra.

Etymology. This species is dedicated to my friend Mr Akio Seino, a specialist of the Psychidae, who was my companion during the field work (1985) in Sumatra.

***Diplurodes bifidisacculus* sp. nov.** (Figs 6–8)

Length of forewing 13–17 mm, wingspan 25–28 mm. Similar to *seinoi*, but distinguished from it by paler wings, especially distad of postmedial lines. Medial whitish area between antemedial and postmedial lines slightly wider on forewing. Also similar to *D. sugillata* Prout. Abdominal coremata developed as well as in the other congeners, while in *sugillata*



Figs 1-36. *Dipluroides* spp. 1-2. *D. inundata* Prout, ♂. 3-5. *D. seinoi* sp. nov. 3-4. ♂, holotype. 5. ♀, paratype. 6-8. *D. bifidisacculus* sp. nov. 6-7. ♂, holotype. 8. ♀, paratype. 9-10. *D. triangulata* Holloway, ♂. 11-13. *D. cristatus* sp. nov. 11-12. ♂, holotype. 13. ♀, paratype. 14-15. *D. semicircularis* Holloway, ♂. 16-18. *D. indentodes* sp. nov. 16-17. ♂, holotype. 18. ♀, paratype. 19-20. *D. indentata* Warren, ♂. 21-22. *D. petras* (Meyrick), ♂. 23-25. *D. sommereri* sp. nov. 23-24. ♂, holotype. 25. ♀, paratype. 26-28. *D. kerangatis* Holloway, ♂. 29-30. *D. submontana* Holloway, ♂. 31-34. *D. diehli* sp. nov. 31-32. ♂, holotype. 33. ♀, paratype. 34. ♂, paratype. 35-36. *D. decursaria* (Walker), ♂.

vestigial to absent (Holloway, 1994: 262). *D. sugillata* was described by Prout (1932: 100) from Borneo. To confirm the identification of this new species, I examined the male holotype of *sugillata* (Borneo, Sabah, Mt Kinabalu, Lumu Lumu, 5,500 ft) and its genitalia slide (Geometridae genitalia slide No. 13171) at BMNH.

Male genitalia (Fig. 39). Similar to those of *sugillata* Prout, but uncus much longer, a pair of sinuous, intertwined saccular processes much shorter, bifurcate apically.

Female genitalia (Fig. 54). Sterigma subelliptical; bursa copulatrix with belt-shaped sclerotization near posterior end and a small bowl-like signum at left side posteriorly.

Holotype. ♂, N. Sumatra, Holzweg II 1,050 m, 30. v. 1990 (E. W. Diehl). Paratypes. N. Sumatra, Berastagi, 2 ♂ 1 ♀, 21. viii. 1979, Mts Dairi 1,600 m, 1 ♀, 28. viii. 1979 (Diehl & Schintlmeister), Holzweg II 1,050 m, 1 ♀, 30–31. vii. 1985 (R. Sato), 1 ♀, 12. v. 1986, 1 ♂ 1 ♀, 12. vi. 1986, 1 ♂, 6. ix. 1986, 1 ♂, 28. x. 1986, 1 ♀, 2. ix. 1989, 1 ♀, 28. x. 1989, 1 ♀, 23. i. 1990, 1 ♀, 21. iii. 1990, 1 ♀, 23. iii. 1990, 1 ♂, 14. ii. 1991, 1 ♀, 20. v. 1991, 1 ♀, 2. ix. 1991, Sitahoan, 1 ♂ 1 ♀, 26. vi. 1990, Prapat, 1 ♀, 18. vii. 1983 (E. W. Diehl), Prapat, Holzweg IV 1,050 m, 1 ♀, 7. vi. 1994 (H. Inoue), P. Siantar, 1 ♂, 20. ii. 1991, Tele, near Tobasee, 1 ♂, 3. vi. 1990 (E. W. Diehl), W. Sumatra, Bukit Subang, 1 ♂ (RS-2743) 1 ♀, 19–20. x. 1981 (A. Schintlmeister). “Holzweg III 1,150 m 14 km NE Prapat 98°58 E/2°46 N”, 1 ♂, 10–25. vi. 1985, “Toba-See Ostufer Parapat ca. 1,100 m”, 1 ♂, 6. vi. 1975, “Bei Brastagi 1,200 m”, 1 ♀, 26. ii. 1985 (E. W. Diehl), “Brastagi 1,200–1,400 m”, 2 ♀, 28–29. xi. 1975 (Bender & Diehl), “Holzweg II 1,050 m 28 km SW Siantar 98°59 E/2°46 N”, 1 ♀, 9. xi. 1970, 1 ♀, 27. ii. 1992, 1 ♀, 13. ix. 1995, “Holzweg III 1,150 m 14 km NE Prapat 98°58 E/2°46 N”, 1 ♂ 1 ♀, 24. iii. 1984 (E. W. Diehl), “Kerinci, Kayu Aro 1,800 m, nördl. Sungaipenuh”, 1 ♀, 20–23. ii. 1976 (M. Sommerer), “Air Sirah vic. Padang 1,200 m”, 1 ♀, 2. vi. 1984 (Widagdo), MS.

Geographical range. Sumatra.

Etymology. The specific name, *bifidisacculus*, refers to the apically bifurcate sacculus in the male genitalia.

Remarks. Holloway (1994: 262) included Sumatra in the geographical range of *sugillata* by examining my genitalia slide (RS-2743) of the male specimen taken at Bukit Subang. However, this specimen should have been identified with this new species. Therefore Sumatra should be deleted from the range of *sugillata*.

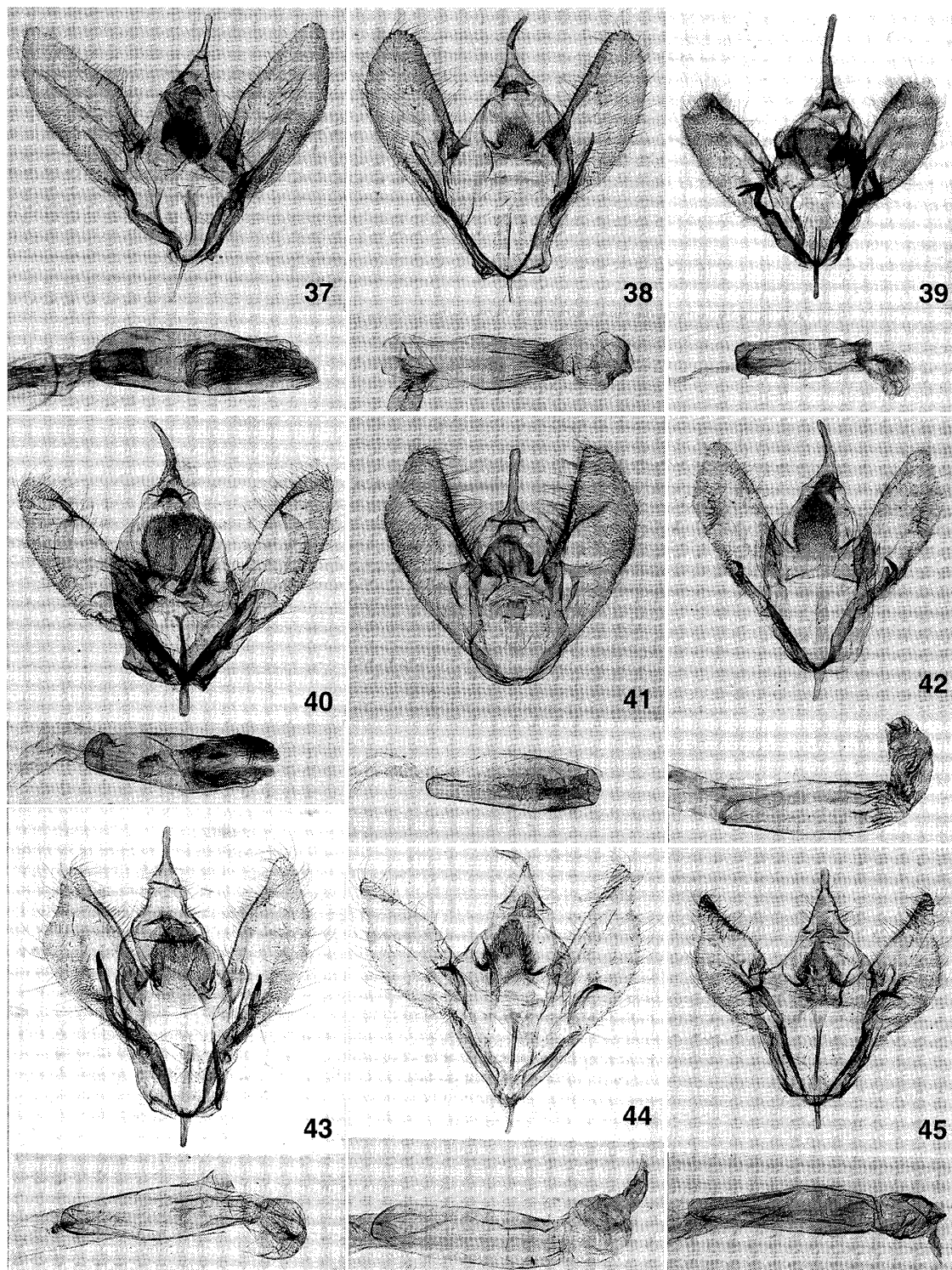
### *Diplurodes cristatus* sp. nov. (Figs 11–13)

Length of forewing 13–14 mm, wingspan 24–27 mm. Also similar to *seinoi*. Smaller in general. Both wings paler with less defined markings; less contrast between dark and pale areas; dark area more uniformly grey; basal grey shading extending to medial line on forewing.

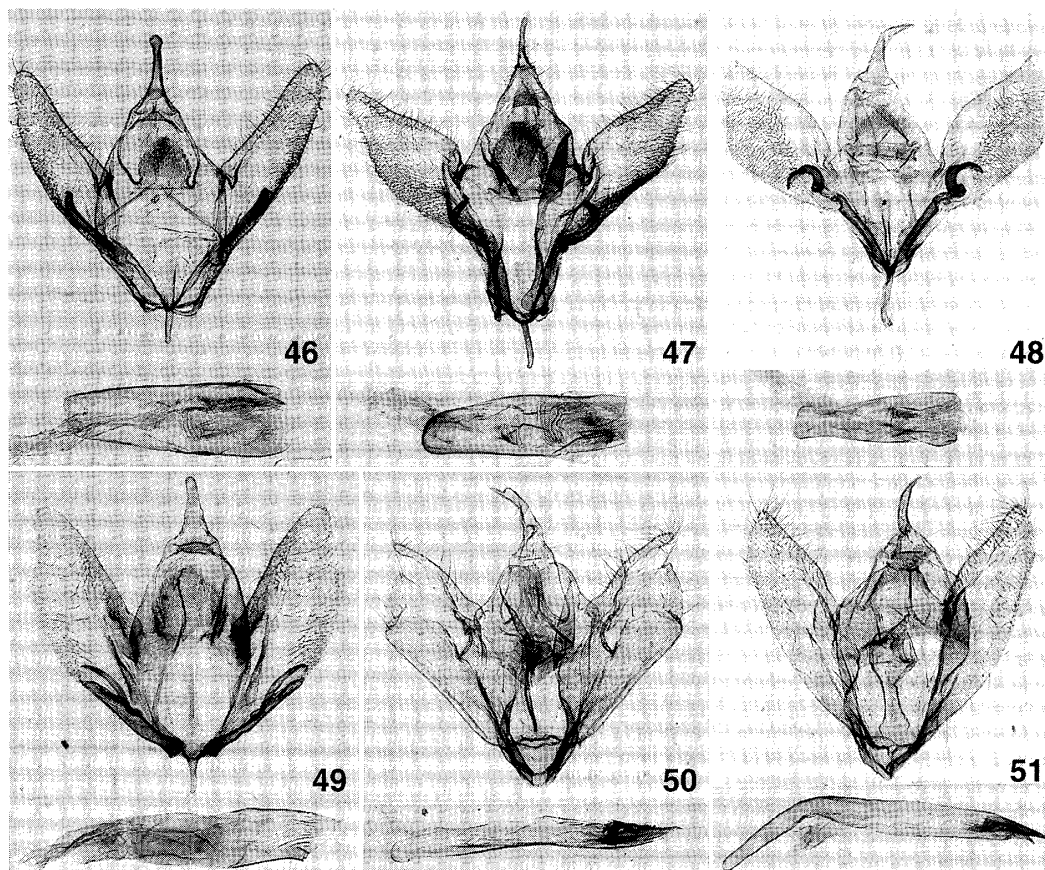
Male genitalia (Fig. 42). Clearly distinguished by a large protuberance with several short crested processes at mid-valva. Tongue-like process from tegumen inverted U-shaped; medial spinous part of gnathos longer than width, tapered apicad; sacculus short with a digitate process.

Female genitalia (Fig. 55). Sterigma narrow; bursa copulatrix slender, cylindrical, weakly sclerotized and ribbed posteriorly, with a small signum at left side posteriorly.

Holotype. ♂, Sumatra Utara, Sitahoan 1,200 m, 4–5. vi. 1994 (H. Inoue). Paratypes.



Figs 37–45. Male genitalia of *Diplurodes* spp. 37. *D. inundata* Prout. RS-2706. 38. *D. seinoi* sp. nov. RS-4059. 39. *D. bifidisacculus* sp. nov. RS-6805. 40. *D. semicircularis* Holloway. RS-2697. 41. *D. triangulata* Holloway. RS-1844. 42. *D. cristatus* sp. nov. RS-6048. 43. *D. indentodes* sp. nov. RS-4057. 44. *D. indentata* Warren. RS-6059. 45. *D. petras* (Meyrick). RS-6060.



Figs 46–51. Male genitalia of *Diplurodes* spp. 46. *D. kerangatis* Holloway. RS-1846. 47. *D. submontana* Holloway. RS-2712. 48. *D. sommereri* sp. nov. RS-2745. 49. *D. diehli* sp. nov. RS-2717. 50. *D. decursaria* (Walker). RS-2741. 51. *D. sinecoremata* Holloway. RS-2694.

Samosir, 1 ♂, 20. ix. 1991 (E. W. Diehl), W. Sumatra, Bukit Subang, Bergurwald 1,200 m, 22 km E. Padang, 1 ♂, 19. x. 1983 (Schintlmeister, Roesler & Widagdo). “Kerinci, Kayu Aro 1,800 m, nördl. Sungaipenuh”, 4 ♂ 1 ♀, 20–23. ii. 1976 (M. Sommerer), “Holzweg III 1,150 m 14 km NE Prapat 98°58 E/2°46 N”, 1 ♂, 21–31. vii. 1984, “Sipirok III 1,300 m, 10 km NE Sipirok”, 1 ♀, 29. i. 1995 (E. W. Diehl), MS. S. Sumatra, Berastagi, 1 ♀, 4. vi. 1972, “Dairi-Berge”, 1 ♂, 5. v. 1972 (Roesler & Küpper), ZFMK.

Geographical range. Sumatra.

Etymology. This specific name, *cristatus*, refers to the crest-like protuberance on the valva in the male genitalia.

### ***Diplurodes triangulata* Holloway (Figs 9–10)**

*Diplurodes triangulata* Holloway, 1994: 264.

This and the next three species (*semicircularis*, *indentata*, *indentodes*) are similar in uniformly brown wings, and are characterized by the presence of a pair of coremata between abdominal segments 3 and 4, in addition to the two pairs (4–5 and 7–8) in male.

This species is distinguished from the others by the strong black medial band on the hindwing and the massive coremata between abdominal segments 3 and 4 in the male. Male



genitalia (Fig. 41): Holloway (1994, fig. 564, Borneo). Female genitalia (Fig. 56): Holloway (1994, fig. 566, Borneo).

Material examined. 1 ♂, Karo Highland 900 m; 1 ♂, SRII, 11 km off Sindar Raya 400 m; 2 ♂ 8 ♀, Holzweg II 1,050 m; 4 ♂ 2 ♀, Prapat; 1 ♂, Sitahoan 1,200 m; 1 ♂ (RS-1835), Gunung Malayu.

Geographical range. Borneo, Peninsular Malaysia, Sumatra.

Remarks. Holloway (1994) included Sumatra in the geographical range of this species based on my genitalia slide (RS-1835, male, Gunung Malayu).

***Diplurodes semicircularis* Holloway (Figs 14–15)**

*Diplurodes semicircularis* Holloway, 1994: 264.

Very similar to *triangulata*. Coremata between abdominal segments 3 and 4 much smaller or vestigial in male; medial black line less defined on hindwing; distal dark and basal pale regions more clearly divided by distinct postmedial lines on underside. Male genitalia (Fig. 40): Holloway (1994, fig. 563, Borneo), Sato (1999, fig. 52, Palawan Is.). Female genitalia (Fig. 57): Sato (1999, fig. 66, Palawan Is.).

Material examined. 1 ♂, Berastagi; 1 ♀, Karo Highland 900 m; 3 ♂, Dolok Merangir 170 m; 1 ♀, Ketambe; 1 ♂, SRII, 11 km off Sindar Raya 400 m; 9 ♂ 9 ♀, Holzweg II 1,050 m; 2 ♂ 2 ♀, Prapat; 1 ♂, Gunung Malayu.

Geographical range. Peninsular Malaysia, Borneo, Sumatra, Philippines (Palawan, Tawi Tawi).

***Diplurodes indentata* Warren (Figs 19–20)**

*Diplurodes indentata* Warren, 1897: 93.

This species was described on the basis of a single male from Penungah in N. E. Borneo. Holloway (1994) recorded three specimens (sex unknown) from Borneo with redescription of the male, but did not mention the female. The female has not yet been described.

Male genitalia (Fig. 44). Most similar to those of *petras*, but tongue-like process from tegumen shorter, medial spinous part of gnathos broader distally. Also illustrated by Holloway (1994, fig. 560, Borneo).

Material examined. N. Sumatra, Holzweg II 1,050 m, 18 km to Prapat, 1 ♂, 4. xi. 1989 (E. W. Diehl). “N. Sumatra, N.W. v. Medan, Stabat”, 1 ♂, 30. iv. 1972 (E. W. Diehl), ZFMK.

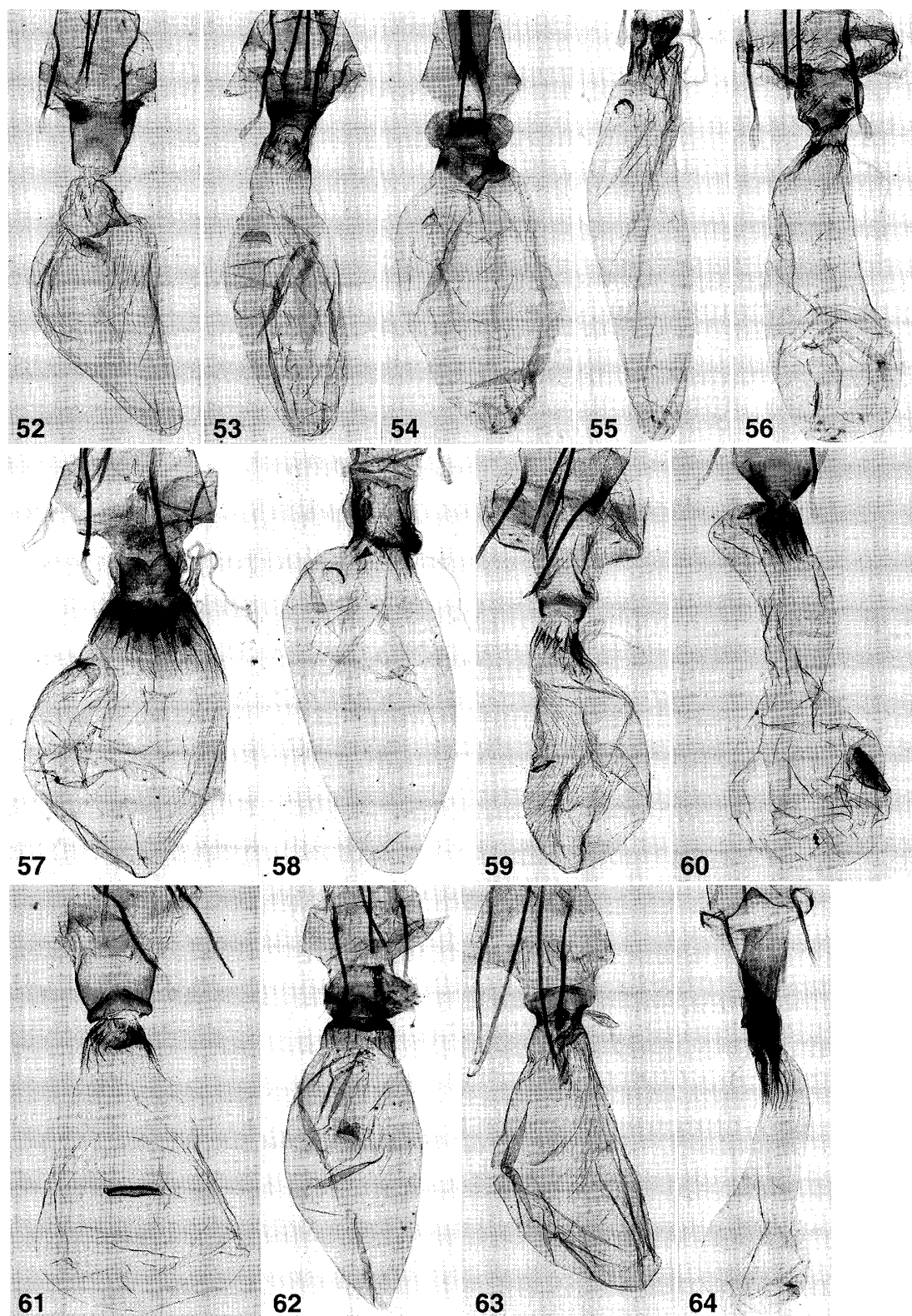
Geographical range. Borneo, Sumatra (new record).

Remarks. Holloway (1994) reported this species to be rare in Borneo. Also in Sumatra it seems to be rare, because only two male specimens were recorded above from Sumatra.

***Diplurodes indentodes* sp. nov. (Figs 16–18)**

Length of forewing 13–15mm, wingspan 21–25mm. Similar to *indentata*. Medial part on forewing and basal part on hindwing paler than the rest, while in *indentata* almost uniformly brown on both wings.

Male genitalia (Fig. 43). Similar to those of *indentata* and *petras*. Tongue-like process



Figs 52-64. Female genitalia of *Diplurodes* spp. 52. *D. inundata* Prout. RS-6046. 53. *D. seinoi* sp. nov. RS-4060. 54. *D. bifidisacculus* sp. nov. RS-2721. 55. *D. cristatus* sp. nov. RS-6049. 56. *D. triangulata* Holloway. RS-2930. 57. *D. semicircularis* Holloway. RS-2746. 58. *D. indentodes* sp. nov. RS-6064. 59. *D. petras* (Meyrick). RS-6057. 60. *D. kerangatis* Holloway. RS-2744. 61. *D. submontana* Holloway. RS-1353. 62. *D. sommereri* sp. nov. RS-2715. 63. *D. diehli* sp. nov. RS-6034. 64. *D. decursaria* (Walker). RS-5307.



from tegumen much shorter; medial spinous part of gnathos much wider, less tapered apicad; valva costa more strongly sclerotized; saccular process asymmetrical, left one longer than the right.

Female genitalia (Fig. 58). Distinct from those of *petras*. Sterigma longer than wide, almost parallel sided, with ridge-like protuberances laterally; bursa copulatrix weakly sclerotized posteriorly with small signum near II posterior end.

Holotype. ♂, N. Sumatra, Mt Sibayak, 4. v. 1988 (S. & A. Saito). Paratypes. Sumatra. W. Sumatra, Bukit Subang, 1 ♀, 19. x. 1981 (A. Schintlmeister), S. Sumatra, Lampung, 1 ♂ 1 ♀, x. 1995 (native collector). P. Malaysia. Genting Highlands, 2 ♀, 6–8. iv. 1986 (K. Yazaki), Came-ron Highlands, 1 ♂ 1 ♀, 19–20. iv. 1990 (N. Bito).

Geographical range. Peninsular Malaysia, Sumatra.

Etymology. This species is similar to *D. indentata* Warren in colour and maculation of both wings.

### ***Diplurodes petras* (Meyrick) (Figs 21–22)**

*Ectropis petras* Meyrick, 1897, *Trans. ent. Soc. Lond.* **1897** (1): 75.

*Diplurodes petras*: Holloway, 1994: 263.

Similar to *indentata* and *indentodes*, but distinguished from them by much paler brown wings and the absence of coremata between segments 3 and 4. Male genitalia (Fig. 45): Holloway (1994, fig. 559, holotype, Borneo).

Female genitalia (Fig. 59). Illustrated here for the first time. Sterigma short, almost parallel sided; bursa copulatrix sclerotized and ribbed, restricted near the posterior end.

Material examined. 1 ♀, Karo Highland 900 m; 1 ♂, Dolok Merangir; 38 ♂ 6 ♀, Holzweg II 1,050 m; 1 ♂, Ketambe; 1 ♂, Prapat; 5 ♂ 1 ♀, P. Siantar; 1 ♂, Aek Tarum II 150 m; 2 ♂, Pakkat; 1 ♂, SRII, 11 km off Sindar Raya 400 m; 2 ♀, Barus, Sibolga, Mt Pinapan.

Geographical range. Borneo, Sumatra.

Remarks. This species was treated as a junior synonym of *D. decursaria* (Walker, 1863) by Parsons *et al.* (1999: 234), but had already been recognized as a distinct species by Holloway (1994).

### ***Diplurodes kerangatis* Holloway (Figs 26–28)**

*Diplurodes kerangatis* Holloway, 1994: 262.

In this and the next two species (*submontana*, *sommereri*), the forewing is reddish grey and the hindwing whitish especially in basal half, coremata developed between segments 4 and 5, and 7 and 8, but lacking between 3 and 4. In some specimens (Fig. 28), outer edge of postmedial line banded with black on both wings. Male genitalia (Fig. 46): Holloway (1994, fig. 565, Borneo).

Female genitalia (Fig. 60). Illustrated here for the first time. Sterigma tapered posteriorly, lateral margins heavily sclerotized; posterior half of bursa copulatrix cylindrical with sclerotization at right near the end, the anterior half globular with a large bowl-like signum at left.

Material examined. 2 ♂, Dolok Merangir 180 m; 35 ♂ 4 ♀, Holzweg II 1,050 m; 2 ♂,

Prapat, Holzweg IV 1,050 m; 7 ♂ 1 ♀, Prapat 1,150 m; 2 ♂ 1 ♀, Gunung Malayu 80 m; 1 ♂, Aek Tarum II 180 m; 2 ♂, Bukit Subang.

Geographical range. Peninsular Malaysia, Borneo, Sumatra.

***Diplurodes submontana* Holloway (Figs 29–30)**

*Diplurodes submontana* Holloway, 1994: 262.

Similar to *kerangatis*. Forewing less suffused with grey; lines more defined. Hindwing with more sinuous postmedial line. Male genitalia (Fig. 47): Holloway (1994, fig. 558, Borneo).

Female genitalia (Fig. 61). Illustrated here for the first time. Clearly different from those of *kerangatis*. Sterigma larger with triangular depression anteriorly; bursa copulatrix globular as a whole, sclerotized and ribbed near the posterior end, with a large narrow signum medially.

Material examined. 26 ♂ 15 ♀, Holzweg II 1,050 m; 1 ♂, Prapat, Holzweg IV 1,050 m; 3 ♂ 13 ♀, Prapat 1,150 m; 1 ♀, P. Siantar; 2 ♂, Sitahoan; 2 ♂, Bukit Subang.

Geographical range. Borneo, Sumatra (new record).

***Diplurodes sommereri* sp. nov. (Figs 23–25)**

Length of forewing 13–16 mm, wingspan 21–26 mm. Similar to *submontana*. Forewing. Postmedial line outcurved between veins CuA<sub>1</sub> and CuA<sub>2</sub>, while in *submontana* deeply incurved from M<sub>3</sub> to inner margin. Hindwing. Postmedial line more weakly incurved than in *submontana*, especially between CuA<sub>1</sub> and CuA<sub>2</sub>. Underside. Distal black area wider than in *submontana*.

Male genitalia (Fig. 48). Distinguished from those of the other congeners by strongly convex ventral margin of valva and tightly coiled saccular process. Also illustrated by Holloway (1994, fig. 561).

Female genitalia (Fig. 62). Sterigma shorter than width, parallel sided; bursa copulatrix pyriform, sclerotized and ribbed near the posterior end, with a small signum.

Holotype. ♂, N. Sumatra, Holzweg II 1,050 m, 2. ix. 1986 (E. W. Diehl). Paratypes. Holzweg II 1,050 m, 1 ♂, 30–31. vii. 1985 (R. Sato), 1 ♂, 18. vi. 1986, 1 ♀, 21. ii. 1987, Sitahoan 1,200 m, 2 ♀, 26. iv. 1990 (E. W. Diehl), 1 ♂ 1 ♀, 4–5. vi. 1994 (H. Inoue), P. Siantar, 2 ♂ 2 ♀, 20. ii. 1991 (E. W. Diehl), Prapat, 1 ♂ 3 ♀, 15. v–3. vi. 1983, 1 ♀, 16. viii. 1983, Gunung Malayu 80 m, 1 ♂ 1 ♀, 4–5. v. 1983 (E. W. Diehl), W. Sumatra, Bukit Subang, 2 ♂, 19–20. x. 1981 (A. Schintlmeister). S. Sumatra, Brastagi 1,200 m, 1 ♂, 17. ii. 1985 (E. W. Diehl), “Holzweg III 1,150 m 14 km NE Prapat 98°58 E/2°46 N”, 1 ♀, 2–10. xii. 1983, 1 ♂, 10–21. xi. 1983, 1 ♂, 25–31. i. 1984, 1 ♀, 11–30. v. 1984, 1 ♀, 10–25. vi. 1984, 1 ♂, 1–16. iv. 1985, 1 ♀, 5. vi. 2000 (E. W. Diehl), MS. “Holzweg III, Tiga-Dolok”, 1 ♀, 2. vi. 1972 (Roesler & Küpper), ZFMK.

Geographical range. Borneo, Sumatra.

Etymology. This new species is dedicated to Mr Manfred Sommerer, who is an excellent lepidopterist in Germany, and kindly supplied me with a large number of specimens used in this study.

Remarks. This species was recorded as *Diplurodes* sp. from Borneo and Sumatra on geni-

talia slide BMNH-14218 and RS-2710, respectively, by Holloway (1994: 263).

***Diplurodes diehli* sp. nov.** (Figs 31–34)

Length of forewing 12–13 mm, wingspan 20–22 mm. Similar to *tanakai* Sato, 1999, from the Philippines (Luzon, Negros, Mindanao). Both wings with less contrast between dark and pale areas; postmedial line outcurved beyond cell, then almost straight to inner margin of forewing, while in *tanakai* slanting outward to it. Variable in maculation. In some specimens (Fig. 34), subterminal black bands developed on both wings. Abdominal coremata developed between segments 4 and 5, and 7 and 8, but not between 3 and 4.

Male genitalia (Fig. 49). Similar to those of *tanakai* (Sato, 1999: 272, fig. 51). Uncus broader; sacculus narrower; saccular process longer, gradually curved, while in *tanakai* strongly angled near base.

Female genitalia (Fig. 63). Similar to those of *tanakai* (Sato, 1999: 278, fig. 71). Sterigma shorter; bursa copulatrix pyriform rather than bulbous, weakly sclerotized and ribbed near the posterior end. Characterized by absence of signum like *tanakai*, but rarely a vesitigial signum recognized at left side posteriorly.

Holotype. ♂, N. Sumatra, Holzweg II 1,050 m, 18 km to Prapat, 29–30. vii. 1985 (R. Sato). Paratypes. Sumatra. N. Sumatra, SR II 400 m, 11 km off Sindar Raya, 1 ♀, 9. v. 1991, 1 ♂, 8. v. 1991, 1 ♀, 21. iv. 1991, 1 ♀, 31. viii. 1991 (E. W. Diehl), Huta Padang 500 m, 1 ♂, 1–4. ix. 1991 (Graul & Schintlmeister), Gunung Malayu 80 m, 1 ♂, 4–5. v. 1983, 1 ♂, 13–14. viii. 1983, Prapat, 5 ♂ 2 ♀, 15. v–3. vi. 1983, 1 ♂, 18. ii. 1983 (E. W. Diehl), S. Sumatra, Lampung, 1 ♀, x. 1995 (native collector), Holzweg II 1,050 m, 1 ♂, 22–24. vii. 1985, 1 ♂, 29–30. vii. 1985 (R. Sato), 1 ♂, 1–4. ix. 1991, 1 ♀, 30. viii–28. ix. 1991 (Graul & Schintlmeister), 2 ♂ 2 ♀, 20. v–12. vii. 1985, 1 ♂, 9. ix. 1985, 1 ♀, 2. vi. 1986, 1 ♀, 11. vi. 1986, 1 ♂, 14. vi. 1986, 1 ♀, 18. vi. 1986, 1 ♀, 29. vi. 1986, 1 ♀, 23. viii. 1986, 1 ♀, 6. ix. 1986, 1 ♂ 1 ♀, 30. ix. 1986, 1 ♂ 1 ♀, 21. x. 1986, 1 ♂, 28. x. 1986, 1 ♀, 8. xi. 1986, 1 ♂ 1 ♀, 1. xii. 1986, 1 ♀, 7. xii. 1986, 1 ♀, 30. i. 1987, 1 ♀, 25. ii. 1987, 1 ♀, 29. ix. 1989, 1 ♂, 2. x. 1989, 1 ♀, 4. x. 1989, 2 ♂ 1 ♀, 5. x. 1989, 2 ♂, 22. x. 1989, 2 ♂, 29. x. 1989, 1 ♂, 19. xi. 1989, 1 ♂, 25. xii. 1989, 3 ♀, 19. i. 1990, 1 ♂ 1 ♀, 23. i. 1990, 1 ♂, 1. iii. 1990, 1 ♀, 30. v. 1990, 1 ♂ 1 ♀, 3. vii. 1990, 1 ♂, 16. vii. 1990, 1 ♂, 6. xi. 1990, 1 ♂, 10. xi. 1990, 2 ♂, 4. ii. 1991, 1 ♂, 14. ii. 1991, 1 ♀, 20. v. 1991, 1 ♂, 5. vi. 1991 (E. W. Diehl). “Holzweg II 1,050 m 28 km SW Siantar 98°59'E/2°46'N”, 1 ♀, 1. vi. 1986, 1 ♀, 23. iv. 1990, 1 ♀, 21. x. 1990, 1 ♀, 31. i. 1995, 1 ♂, 29. ix. 1995, “Holzweg III 1,150 m 14 km NE Prapat 98°58'E/2°46'N”, 1 ♀, 10. v. 1983, 1 ♀, 4. x. 1983, 2 ♂, 2–10. xii. 1983, 1 ♀, 25–31. i. 1984, 1 ♂, 13–27. iii. 1984, 1 ♂, 25–28. x. 1984, 1 ♀, 14. x. 1985, 1 ♂, 1–16. iv. 1995, “Dolok Merangir 170 m”, 1 ♀, 14. ix. 1970, 1 ♂, 2. xii. 1980, “Talung Sunkit”, 1 ♂, 27. vii. 1982, “Sindar Raya II 400 m, 11 km S. Sindar Raya, 98°51'E/3°53'N”, 1 ♂, 15. iv. 1997 (E. W. Diehl), “Sumatra occ. ca. 30 km E Tapan 1,000 m”, 2 ♂ 1 ♀, 24. ii. 1976 (M. Sommerer), MS. “Deli, Dolok Merangir 150 m”, 1 ♂, xi. 1967, *ditto* 180 m, 1 ♂, ix. 1970–i. 1971 (E. W. Diehl), ZSM. Borneo. Sabah, Kota Kinabalu, Crocker Range 500–1,500 m, 1 ♂, vi. 1992 (native collector). P. Malaysia. Cameron Highlands, Blue Valley, 1 ♀, 1. v. 1994, *ditto*, Tanah Ratah, 1 ♂, 20. iv. 1990 (N. Bito). Thailand. Wiang Pa Pao, Chang Rai, 1 ♂, 29. iv–3. v. 2002 (T. Mano), Chiang Mai, Doi Pui 1,400 m, 1 ♂, 15. v. 2001 (S. Sakurai), Doi Suthep, 1 ♂, 1. v. 1987 (S. & A. Saito). Nan Prov., Pua, Doi Phu Kha, km35, 1,680 m, 2 ♂, 20. ii. 1993 (D. Stüning), *ditto* 1,450 m, 1 ♂, 26. xii. 1991 (H. Schnitzler), Chiangmai, Doi Suthep 1,050 m, 4 ♂, 24–25. xi. 2000 (D. Stüning), Doi Suthep 1,350 m, Meo Village View Point, 2 ♂, 22. xi–4. xii. 1989 (Schnitzler), ZFMK. Vietnam. N. Vietnam, Vinh Phu Prov., Tam Dao 930 m, 1 ♂, 12, 16–17. i. 1996, Son La Prov., Moc Cha 940 m, 1 ♂, 30. iv.

1995 (M. Owada), NSMT. S. Vietnam, Bao Loc 800 m, Lam Dong, 1 ♂, 1–5. v. 2000 (T. Mano).

Geographical range. Vietnam, Thailand, Peninsular Malaysia, Borneo, Sumatra.

Etymology. This specific name is dedicated to the late Dr Eduard W. Diehl, who made an important contribution to the Sumatran moth-fauna for over 30 years.

### ***Diplurodes decursaria* (Walker) (Figs 35–36)**

*Tephрина decursaria* Walker, 1863: 1659.

*Diplurodes decursaria*: Holloway, 1976: 80; Holloway, 1994: 265.

Pairs of coremata between abdominal segments 4 and 5, and 7 and 8, weakly developed in male. Male genitalia (Fig. 50): Holloway (1994, fig. 567, Borneo), Sato (1999, fig. 55, Borneo). Female genitalia (Fig. 64): Sato (1999, fig. 76, Sumatra).

Material examined. Karo Highland 900 m, 1 ♀, iii. 1978 (T. Hasegawa), Holzweg II 1,050 m, 1 ♂, 10. v. 1986, 1 ♀, 25. xii. 1989, 1 ♀, 10. xi. 1990, P. Siantar, 1 ♀, 26. xi. 1991 (E. W. Diehl). Holzweg III 1,150 m, 14 km NE Prapat, 1 ♀, 9. iii. 1983, 1 ♂, 19. i. 1985 (E. W. Diehl), MS.

Geographical range. Peninsular Malaysia, Borneo, Sumatra.

### ***Diplurodes sinecoremata* Holloway**

*Diplurodes sinecoremata* Holloway, 1994: 265.

Characterized by absence of abdominal coremata in male.

Male genitalia (Fig. 51): Holloway (1994, fig. 568, Borneo), Sato (1999, figs 53 & 60, Mindanao Is.). Female genitalia: Sato (1999, fig. 72, Luzon Is.).

Material examined. Gunung Malayu, 1 ♂, 13–14. viii. 1983, RS-2694 (E. W. Diehl).

Geographical range. Borneo, Sumatra, Philippines (Luzon, Negros, Mindanao, Palawan).

Remarks. This species is rare in Sumatra. I examined only one male specimen from there, which was already recorded by Holloway (1994: 266) based on the genitalia slide (RS-2694).

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## 摘 要

スマトラの *Diplurodes* 属 (シャクガ科, エダシャク亜科) (佐藤力夫)

Holloway (1994) は、ボルネオの種を基に *Diplurodes* 属とその近縁属について検討し、それぞれの属を特徴づける形質を明らかにした。その際に、筆者が同定依頼のために送付したスマトラ産の標本も調べられ、一部は分布記録として引用されたが、いくつかの種は未同定のまま筆者にその後の研究が委ねられた。その後、スマトラ在住の Dr E. W. Diehl (故人) から多数の標本が提供され、筆者自身も Dr Diehl のお世話で現地調査を実施することができた。また、Mr M. Sommerer (ミュンヘン) の採集品なども借用し検討した結果、スマトラから *Diplurodes* 属 15 種を確認することができた。そのうち次の 6 種は新種であり、2 種は初記録であった。

*D. seinoi* Sato, *D. bifidisacculus* Sato, *D. cristatus* Sato (以上 3 種は現時点でスマトラ固有), *D. indentodes* Sato (P. Malaysia にも分布), *D. sommereri* Sato (Borneo にも分布), *D. diehli* Sato (Vietnam, Thailand, P. Malaysia, Borneo にも分布)。

*D. submontana* Holloway と *D. indentata* Warren はスマトラから初めて記録された。

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